



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/812,074 | 03/30/2004 | Koji Shirakawa | Q80838 | 3020 |
| 23373 | 7590 | 11/14/2005 | EXAMINER | |
| SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037 | | | LEE, SIN J | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1752 | |

DATE MAILED: 11/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/812,074 | SHIRAKAWA ET AL. | |
| | Examiner | Art Unit | |
| | Sin J. Lee | 1752 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 29 August 2005.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-10,13 and 14 is/are rejected.
- 7) Claim(s) 11 and 12 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date: _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

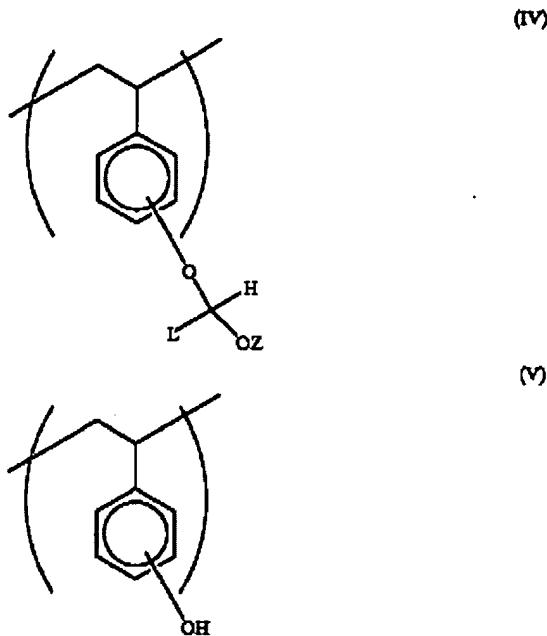
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1-10, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishiyama et al (US 6,537,718 B2).

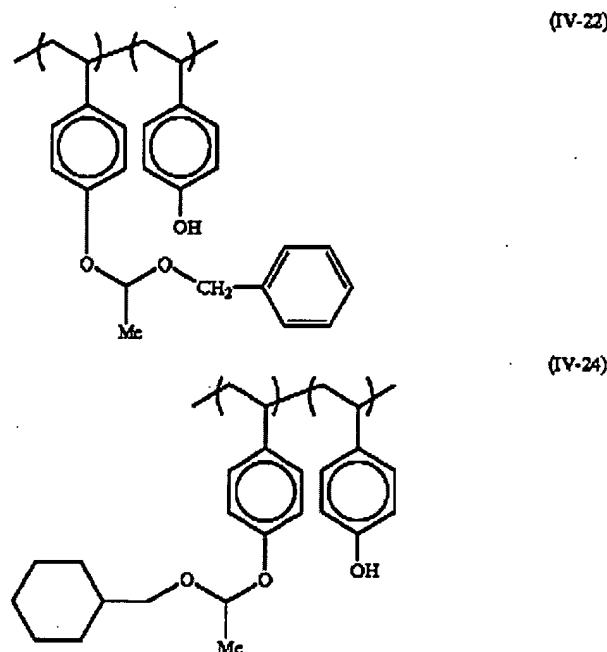
Nishiyama teaches (see claims 1 and 3) a positive photoresist composition containing a photoacid generator and a resin, which is described in his claim 3 which is shown below.

3. The positive photoresist composition for exposure to a far ultraviolet ray as claimed in claim 1, wherein the resin (B) contains a repeating unit represented by formula (IV) shown below and a repeating unit represented by formula (V) shown below:



wherein L represents a hydrogen atom, a straight-chain, branched chain or cyclic alkyl group which may be substituted or an aralkyl group which may be substituted; Z represents a straight-chain, branched chain or cyclic alkyl group which may be substituted or an aralkyl group which may be substituted; or Z and L may be combined with each other to form a 5-membered or 6-membered ring.

Among the examples for such resin (B), Nishiyama discloses (see col.29) following two:



Both of these resins include preset acid-decomposable group (X) of claim 1. It is the Examiner's position that one skilled in the art would immediately envisage using either of those resins as Nishiyama's resin (B) since Nishiyama clearly discloses those two resins among the examples of his resin made of formulas (IV) and (V). Nishiyama teaches (col.38, lines 5-12) that the wt. average Mw of his resin is preferably in a range of 2,000 to 300,000. Since the data point of 2,000 is clearly disclosed as the lower end of the taught range, one skilled in the art would immediately envisage Nishiyama's resin (B) to have the Mw of 2,000 (thus, the prior art teaches present limitation as to the wt average molecular weight being not more than 5,000). Nishiyama also teaches (col.24, lines 61-65) that the molar ratio of the repeating unit of the formula (IV) to the repeating unit of the formula (V) present in his resin is *more preferably* from 10/90 to 40/60 (thus, the prior art teaches present limitation as to the amount of the acid decomposable group

Art Unit: 1752

being not more than 40%). Nishiyama teaches the use of a organic basic compound in his composition (see col.39, lines 50-67) as well as the use of a surfactant (see col.39, lines 1-5). Nishiyama also teaches the solvent combination of propylene glycol monomethyl ether acetate and propylene glycol monomethyl ether in his claim 1. Nishiyama coats his photoresist composition onto a substrate, exposes the coated substrate to the exposure light such as X ray or an electron beam and then develops the exposed photoresist film to obtain a resist pattern (see col.42, lines 53-64). Therefore, Nishiyama teaches present inventions of claims 1-10, 13 and 14.

Allowable Subject Matter

4. Claims 11 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Nishiyama does not teach or suggest present Z group of claim 11 which has R5 substituent.

Response to Arguments

5. Applicants argue that the Examiner does not address the present recitation as to the wt. average Mw of not more than 5,000 and also that the Examiner does not directly address the recitation of present claim 1 as to the amount of the acid decomposable group being not more than 40%. The Examiner believes that those arguments are addressed above in Paragraph 3.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333.

The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. f. L.
S. Lee
November 12, 2005

Sin f. Lee
SIN LEE
PRIMARY EXAMINER